

dbx

500 Subharmonic Synthesizer
501 Dynamic Range Expander
503 3 Band Dynamic Range Expander
505 Sound Enhancement System



The Model 500 — Subharmonic Synthesizer

The Model 500 analyzes the 50-100 Hz range of audio signals appearing at its input jacks and synthesizes a signal exactly one octave below any musical information appearing within that band. This synthesized signal has a wave form appropriate to the source so that the low bass information synthesized by the Model 500 is audibly correct when mixed with the program signal. The subharmonic signal can be mixed into the original program material or routed through a separate audio processing chain. The Model 500 also provides a user adjustable boost to the low frequencies of the program material being processed. The dramatic bass enhancement effect of the Model 500 cannot be duplicated by any equalization or expansion system. It synthesizes or creates very low frequencies that are not present in the original program source.



The Model 503—3 Band Dynamic Range Expander

The dbx Model 503 is a rack mount version of our already famous dbx 3BX Dynamic Range Expander. It restores much of the drama, impact and excitement of a live performance by making loud passages louder and soft passages quieter. Bass, midrange and treble frequencies are sensed in the music signal and expanded individually for extraordinary clarity of sound from even the most complex musical material. Three rows of LEDs are used to monitor the degree of expansion in each of the three frequency ranges. An expansion level control lets you select the amount of expansion you want, up to 50%. And, with the transition level control, you can adjust the threshold of expansion to vary the level above which the music signal is upward expanded and below which it is downward expanded. It gives more punch to the drums and bass, the brass has more bite and the vocals jump right out at the listener. The stereo input channels are individually RMS detected and summed to provide true stereo action without image smearing or sensitivity to phase shifts in the program source. Patented VCA circuitry provides gain control linear in decibels over a 100 decibel range.



The Model 501 — 1 Band Dynamic Range Expander

The Model 501 is a single band version of the Model 503 Dynamic Range Expander. RMS detection and VCA gain control combined with careful attention to the psychoacoustics of the attack and release rates provide users on a more limited budget with the advantages of dbx dynamic range expansion.



The Model 505 — Combination 1 Band Range Expander & Subharmonic Synthesizer

The Model 505 represents the most cost effective way to incorporate dbx sound enhancement into your audio system. The Model 505 combines the circuitry of the Model 501 single band Dynamic Range Expander and the Model 500 Subharmonic Synthesizer together in a single 3½" rack mount package. It provides truly remarkable sonic performance in a compact package. The 501 and 500 sections of the dbx Model 505 can be operated independently or in conjunction.

Model 500



SPECIFICATIONS

DYNAMIC RANGE (peak signal to weighted background noise): 100 dB
INPUT IMPEDANCE: 47 k Ω
INPUT LEVEL (nominal): 300 mV
INPUT LEVEL (maximum): 7 VRMS
OUTPUT IMPEDANCE (designed to drive 5 k Ω or greater): 470 Ω
OUTPUT LEVEL (maximum, 20 Hz to 20 kHz): 7 VRMS
FREQUENCY RESPONSE: 20 Hz to 20 kHz $\pm$ 1 dB
EQUIVALENT INPUT NOISE (unweighted, 20 kHz bandwidth, referenced to 1 V): -85 dBV
TOTAL HARMONIC DISTORTION: 0.1% typical, main signal channel
I.M. DISTORTION (SMPTE): 0.15%, main signal channel
POWER LINE REQUIREMENT: 117 VAC, 50 to 60 Hz
(Consult Factory for Non-U.S. Line Voltages)
POWER LINE CONSUMPTION: 10 W
DIMENSIONS 3 1/2" H x 19" W x 10 1/2" D (8.9 cm x 48.3 cm x 26.7 cm)
SHIPPING WEIGHT: 5 lbs./2.26 kg

Model 501



SPECIFICATIONS

EXPANSION RATIO: Continuously adjustable from 1.0 to 1.5 (0 to 50% increase), linear in decibels
DYNAMIC RANGE (peak signal to weighted background noise): 100 dB
INPUT IMPEDANCE: 50 k Ω
INPUT LEVEL (nominal): 300 mV
INPUT LEVEL (maximum): 7 VRMS
OUTPUT IMPEDANCE (designed to drive 5 k Ω or greater): 100 Ω
OUTPUT LEVEL (maximum, 20 Hz to 20 kHz): 6 VRMS
FREQUENCY RESPONSE: 20 Hz to 20 kHz $\pm$ 0.5 dB @ 1.0 expansion
EQUIVALENT INPUT NOISE (unweighted, 20 kHz bandwidth, referenced to 1 V): -85 dBV
TOTAL HARMONIC DISTORTION: 0.1% typical, @ 1.0 expansion, 20 Hz to 20 kHz
I.M. DISTORTION (SMPTE): 0.15% typical
POWER LINE REQUIREMENT: 117 VAC, 50 to 60 Hz
(Consult Factory for Non-U.S. Line Voltages)
POWER LINE CONSUMPTION: 10 W
DIMENSIONS 3 1/2" H x 19" W x 10 1/2" D (8.9 cm x 48.3 cm x 26.7 cm)
SHIPPING WEIGHT: 4.5 lbs./2.0 kg

Model 503



SPECIFICATIONS

EXPANSION RATIO: Continuously adjustable from 1.0 to 1.5 (0 to 50% increase), linear in decibels
DYNAMIC RANGE (peak signal to weighted background noise): 100 dB
INPUT IMPEDANCE: 50 k Ω
INPUT LEVEL (nominal): 300 mV
INPUT LEVEL (maximum): 7 VRMS
OUTPUT IMPEDANCE (designed to drive 5 k Ω or greater): 100 Ω
OUTPUT LEVEL (maximum, 20 Hz to 20 kHz): 7 VRMS
FREQUENCY RESPONSE: 20 Hz to 20 kHz $\pm$ 0.5 dB @ 1.0 expansion
EQUIVALENT INPUT NOISE (unweighted, 20 kHz bandwidth, referenced to 1 V): -85 dBV
TOTAL HARMONIC DISTORTION: 0.1% typical, @ 1.0 expansion, 20 Hz to 20 kHz
I.M. DISTORTION (SMPTE): 0.15% typical
POWER LINE REQUIREMENT: 117 VAC, 50 to 60 Hz
(Consult Factory for Non-U.S. Line Voltages)
POWER LINE CONSUMPTION: 30 W
DIMENSIONS 3 1/2" H x 19" W x 10 1/2" D (8.9 cm x 48.3 cm x 26.7 cm)
SHIPPING WEIGHT: 12 lbs./5.44 kg

Model 505



SPECIFICATIONS

DYNAMIC RANGE ENHANCEMENT SECTION
Same as dbx Model 501
SUBHARMONIC SYNTHESIS SECTION
Same as dbx Model 500



Professional Products Division
dbx, Incorporated
71 Chapel Street
Newton, Mass. 02195
617/964-3210

Specifications subject to change without notice. Manufactured under one or more of the following U.S. patents: 3,661,618; 3,714,462; 3,789,143; 4,101,849; 4,097,767.
Other patents pending.

dbx® is a registered trademark of dbx, inc. 7816M-600176 Printed in U.S.A.

dbx

81 W extended range dBm meter

Now for the first time routine noise measurements on professional audio systems can be made without elaborate laboratory instruments.

The dbx Model 81 W extended range dBm meter makes noise and program level measurements simple and convenient. It covers the entire dynamic range of most program material on a single scale. A percentage scale allows wide range modulation monitoring.

The dbx Model 81 W uses advanced FET operational amplifier and logarithmic converter techniques. A unique circuit provides true RMS readout.

Model 81 W has a second jack which adds 40 dB to the scale reading thereby covering both -70 to +10 dBm and -30 to +50 dBm.

Features

- wide dynamic range
- battery operated
- -70 to +10 dBm on a single scale
- ring tip sleeve plug
- true RMS response
- available with +50 dBm range

